

Application No. 10/662,815
Art Unit: 2835

Amendment under 37 C.F.R. §1.111
Attorney Docket No.: 031184

AMENDMENTS TO THE DRAWINGS

Fig. 2 has been amended to change reference numeral "200" to --210--. Attached hereto please find an annotated sheet and a replacement sheet of Fig. 2.

REMARKS

The specification, drawings and claims have been amended as set forth above.

The specification is objected to because of the noted informalities.

The specification has been amended to properly describe FIGS. 3A-3B and FIGS. 4A-4B. Additionally, reference numeral 164 has been changed to 164A on page 9, line 24, not on page 7 as suggested in the Office Action. Additionally, on page 10, line 1, reference numeral 160 has been changed to 160A. Additional corrections have been made.

The drawings are objected to as failing to comply with 37 CFR §1.84(p)(5) because they do not include proper reference numerals mentioned in the specification.

The Office Action notes that on page 10, reference numeral 210 is not present in FIG. 2, as indicated in the specification. Accordingly, attached hereto is a copy of FIG. 2 is a copy of FIG. 2 with the proper change indicated therein. Also, a copy of the corrected figure is also provided.

Claims 2-4, 6-8, 10-12 and 17-20 are objected to.

The claims has been amended as set forth above, and a consistent preamble is now set forth therein.

Claims 1 and 9 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

The amendments to the claims, as set forth above, overcome the deficiencies as noted in the Office Action.

Claims 1, 2, 4, 7-10, 12, 18 and 19 are rejected under 35 U.S.C. §102(e) as being anticipated by Ali (USP 6,459,582).

As illustrated in Fig. 1B of Ali, a package board 112 may compressed against printed circuit board 130 by way of nut assemblies 152A and 152B and the package board 112 can be connected to the heat sink 160 by way of nut assemblies 162A and 162B.

Claim 1, as amended, now requires a “first pressure mechanism” and a “second pressure mechanism” separate from the first pressure mechanism. Additionally, the application of the first pressure is independent from the application of the second pressure. Claim 1 specifically recites the above features as follows:

a first pressure mechanism that applies a first pressure for operatively connecting the heat sink to the package board; and

a second pressure mechanism that applies a second pressure for operatively connecting the package board to the printed circuit board, said second pressure mechanism being separate from said first pressure mechanism and an application of the first pressure by said first pressure mechanism being independent of an application of the second pressure by said second pressure mechanism.

The above features as distinct from the cited references.

Specifically, claim 1 (and claim 9, similarly amended) is amended to include a limitation such that the “second pressure mechanism is being separate from said first pressure mechanism and an application of the first pressure by said first said pressure mechanism being independent of an application of the second pressure by said second pressure mechanism.” This amendment is supported, for example, by FIGS. 3A – 4B. This limitation has an effect that enables the package modules 100 shown in FIGS 3A and 3B to be handled as one integrated member. Once

module is assembled into the package module using the first pressure mechanism, the package structure can be carried, shipped, stored, mounted on the printed board, and demounted from it as a unit of the package module.

In Ali, when fixture screws are detached, both the first and second pressures are simultaneously removed, thus breaking the module itself into multiple pieces. When this happens, Ali cannot maintain a package module. Accordingly, it is very difficult for an operator to separately handle each component of the package module in carrying, shipping, storing, mounting/demounting the package module. Accordingly, Ali does not disclose the above features. Since Ali does not disclose each and every feature set forth in the claims, Applicants submit that the above claims are patentable over Ali, and respectfully request that the above rejection be withdrawn.

Claims 1, 2, 4, 8-10, 12 and 19 are rejected under 35 U.S.C. §102(e) as being anticipated by Goodwin (USP 6,545,879).

As best seen in Figs. 1 and 4, the Office Action states that first springs 46 and second springs 48 function as a first and second pressure mechanism. Furthermore (see Fig. 4), first springs 48 press the heat sink 40 against package 412, toward the printed circuit board 30. It appears also that the second springs 46 press the package board 12 against the printed circuit board 30. The Office Action also notes that in column 4, lines 60-64, Goodwin states that the second stiffness of the second springs 48 may be less than the stiffness of the first springs 46.

The same arguments as set forth above with regard to Ali also apply to Goodwin. In other words, in Goodwin also, when fixture screws are detached, first and second pressures are

simultaneously removed, thus allowing the module to break into pieces. As with Ali, Goodwin cannot maintain a package module. Accordingly, as with Ali, Goodwin does not disclose each and every feature now required by claim 1 and claim 9. Accordingly, it is respectfully requested that the above rejection be withdrawn.

Claims 5 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ali in view of Nguyen (USP 6,449,170).

Nguyen is simply cited to show a package board made of resin. However, since claims 5 and 11 are dependent from claims 1 and 9 respectively and limited to the additional features set forth therein, claims 5 and 11 are allowable for the same reasons set forth above with regard to claims 1 and 9. Additionally, the Ali reference should be removed under the §103 rejection, since there is common ownership.

Claims 5 and 11 are also rejected under 35 U.S.C. §103(a) as being unpatentable over Goodwin in view of Nguyen.

The same remarks apply as in the previous rejection, except there is no common ownership.

Applicants wish to thank the Examiner for the indication that claims 6, 17 and 20 contain allowable subject matter. Accordingly, these claims have been rewritten as independent claims.

In view of the amendments to the specification, claims and drawings, Applicants submit that the Examiner's objections and rejections have been overcome. It is accordingly respectfully requested that the objections and rejections be withdrawn and that the present claims be allowed.

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CONCLUSION

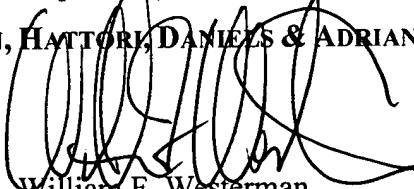
In view of the foregoing amendments and accompanying remarks, it is submitted that all pending claims are in condition for allowance. A prompt and favorable reconsideration of the rejection and an indication of allowability of all pending claims are earnestly solicited.

If the Examiner believes that there are issues remaining to be resolved in this application, the Examiner is invited to contact the undersigned attorney at the telephone number indicated below to arrange for an interview to expedite and complete prosecution of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

A large, stylized handwritten signature in black ink, which appears to read 'William F. Westerman', is written over the printed name and firm name.

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